

## Can an Experienced Urologist Do A Better TURP?

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### Abstract

**Objective:** To evaluate the influence of the urologist's experience on the surgical results and complications of transurethral resection of the prostate (TURP).

**Patients and methods:** This was a prospective study done between May 2008 to May 2009. Sixty-seven patients undergoing transurethral resection of the prostate without the use of a video camera were randomly allocated into two groups according to the urologist's experience: a junior urologist with moderate experience of transurethral resections of the prostate (Group I – 34 patients), a senior urologist with vast transurethral resection of the prostate experience (Group II – 33 patients); The following parameters were recorded: the weight of resected tissue, the duration of the resection procedure and how many patients among each group needed a second TURP.

**Results:** The weight of resected tissue per minute was approximately four times higher in group II than in groups I. Also the resection time was significantly low in group II. Significant number of patients needed a second TURP in group I.

**Conclusion:** The senior urologist was capable of resecting four times more tissue per time unit than the more inexperienced surgeons. Therefore, a surgeon's experience may be important to reduce the risk of secondary TURP due to recurring adenomas or adenomas that were incompletely resected.

**Key words:** transurethral resection of prostate, BPH, prostetic adenoma

### Introduction

Despite the introduction of alternative techniques and pharmacological agents, transurethral resection of the prostate (TURP) remains a treatment of choice for benign prostatic hyperplasia, especially in Third World countries<sup>1-3</sup>. Combined pharmacological therapy (alpha-adrenergic and 5-alpha-reductase inhibitor) faces two principal problems in developing countries: cost and patient compliance<sup>1</sup>. Combined therapy costs just over Rs 10000/- per year, and a 55-year-old man can be expected to pay Rs 100000/- for a lifetime supply of these drugs. Furthermore, in developing countries, once the patient feels better, he generally stops using the therapy and does not return to see his doctor<sup>1,4</sup>. TURP costs under Rs 10000/- to 15000/- and requires minimal follow-up. Therefore, evalua-

tion of TURP technical improvements, surgical training, and surgical complications still has major importance in our developing country.

Since the introduction of TURP by McCarthy in 1926, the type of irrigating fluid that is used during the procedure and the method used to monitor its absorption have been subjects of wide-ranging debate<sup>5,6</sup>. It is accepted that the irrigating fluid may enter the systemic circulation through the prostatic plexus of veins or via the periprostatic and perivesical space due to perforations of the prostatic capsule<sup>6</sup>. Side-effects of irrigating fluid absorption can be deleterious; one of the more serious and potentially fatal side-effects is TURP syndrome. Estimates of the incidence of TURP syndrome range from 0 to 10%. This syndrome is currently poorly defined,

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and many mild cases may be falsely attributed to old age, anesthetic complications, or excessive blood loss<sup>5,7-10</sup>. The volume of absorbed irrigation fluid can be difficult to estimate; however, it tends to be greater in extended and bloody operations<sup>6,11</sup>. Therefore, it is often claimed that inexperienced urologists and training residents more frequently induce irrigating fluid absorption and TURP syndrome than experienced urologists, who are capable of resecting more tissue per time unit.

In the present study, we evaluate the influence of the level of experience of a urologist on the surgical outcome of classic TURP without the use of a video camera. Since we did not have the facilities available at our hospital to analyze the incidence of irrigating fluid absorption, we recorded resection time, amount of resected tissue and number of patients who required a second TURP soon after the first among two groups of urologists with different levels of experience with TURP.

#### Patients and methods

Sixty-seven patients undergoing TURP in our hospital were recruited to a prospective study and randomly allocated into one of two groups with varying urologist experience: a urologist with moderate experience had done 34 TURPs (Group I – 34 patients); a senior urologist with

vast TURP experience (Group II – 33 patients). All patients gave fully informed consent. There were no differences between the groups in mean age ( $p=0.49$ ) or mean prostatic weight ( $p=0.68$ ) in sonography (Table 1).

The patients were given spinal anesthesia. The operative technique was the classic McCarthy technique with median lobe and lateral lobe resection until open vision of the bladder was obtained. All of the procedures were done using a 24Fr resectoscope. A video camera was not used for the resection. Glycine was used as the irrigating fluid. The height of the irrigating fluid was uniformly up to 60 cm.

In all patients, the weight of resected tissue, duration of TURP, and the volume of irrigant used were recorded. All the data was put in a SPSS software and when two groups were compared, we used the student's t-test. Qualitative variables were assessed by the chi-squared test. Statistical significance in this study was set as  $p \leq 0.05$ .

#### Results

The operating time was significantly longer in groups I as compared to group II and the weight of resected tissue was significantly greater in group II relative to the other group. The weight of resected tissue per minute was approximately four times higher in group II than in groups I (Table 1). Both the Urologists used almost the similar amount for the irrigation during and after the procedure. All the patients of both the groups stayed at hospital for almost a similar time. Among group I, four patients came 2 months after the TURP with LUTS again. Ultrasound of them showed an obstructing prostate. They underwent a second TURP. Like wise six patients came after five months and four after eight months. Ultrasound of all of them also showed an obstructing prostate. They too underwent a second TURP. Among group II three patients came back one after 10 months and the two in the last month when we were about to conclude the study. Their ultrasound also showed an obstructing prostate. They also underwent a second TURP.

Table 1: Comparison of urologists with different levels of TURP experience

	Group I Median/Mean (range) $\pm$ SD	Group II Median/Mean (range) $\pm$ SD	Signifi- cance
Number of patients	34	33	
Age - years	63/63 $\pm$ 6.5 (48–78)	65/64.3 $\pm$ 6 (54–76)	0.49
USG prostatic weight - g	46.5/45 $\pm$ 20.4 (13–96)	49/51 $\pm$ 22 (18–90)	0.68
Resection Time - minutes	45/45.8 $\pm$ 11 (30–65)	30/30.5 $\pm$ 10 (14–45)	<0.01
Resected Tissue - g	9/12.4 $\pm$ 9 (2–30)	25/33.3 $\pm$ 24.6 (5–85)	<0.01
Resected Tissue/op time - g/min	0.26/0.26 $\pm$ 0.15 (0.04–0.53)	0.83/1.07 $\pm$ 0.63 (0.11–2.25)	<0.01
Irrigating Fluid Used (L)	10/11.5 $\pm$ 5.4 (4.5–26)	12.5/13.6 $\pm$ 5.8 (7.5–26)	0.34
Number of patients needed a second TURP	14	3	

### Discussion

Despite the development of effective medical therapy for TURP and the decline in its frequency in many countries over the past decade, it is still one of the most common interventions in elderly men, especially in developing countries<sup>12-15</sup>. Today, technological improvements, such as microprocessor-controlled units, better armamentarium, and facilities for medical training have helped to reduce perioperative complications, such as transfusion rate, clot retention, and TURP syndrome<sup>1</sup>. The introduction of video camera-assisted TURP and the development of virtual reality training systems for TURP have enhanced training on this procedure, provided more physical comfort to the surgeon, improved the technical skills of surgeons and reduced complications rates and hospital stays<sup>16,17</sup>. The need for complete resection of a prostate adenoma was recently questioned since partial resections can produce short term functional results comparable to those of standard TURP with a short surgical time and minor complications<sup>18</sup>. Finally, the introduction of bipolar resection devices for TURP has allowed for coagulation of tissue during resection, using normal saline as the irrigant fluid. This technique has reduced the potential for TURP syndrome and allowed for earlier removal of the urinary catheter and discharge from the hospital, while simultaneously decreasing complications, as indicated by some recent studies<sup>19-21</sup>. Therefore, in this environment, the influence of a surgeon's experience on the results and complications of TURP is questionable.

In developing countries, however, the virtual reality training system, bipolar resection devices and video camera-assisted TURP are not always available. Surgeons in developing countries perfect their surgical skills in the operating room. Therefore, learning and practice of the standard TURP procedure, without video camera assistance, is of great importance. Here, we compared the results of standard TURP procedures performed by urologists with two different levels of experience in our hospital. The senior urologist (group II) resected significantly more material per patient in less surgical time than the inexperienced urologist (Group I). He

was capable of resecting four times more tissue per time unit than the inexperienced surgeons. We suggest that this ability is of great importance, as it indicates that resections performed by experienced urologists should have a lower frequency of redo TURP due to recurrent adenomas or adenomas that were incompletely resected. Previous reports have shown that the risk for a secondary TURP was approximately 50% higher after primary TURP as compared to open prostatectomy, which involves more complete resection of the adenoma. The cumulative probability of a second prostatectomy ranges from 6.6 to 15% over 6 to 8 years in long-term series; this incidence may be higher when the TURP is performed by an inexperienced surgeon<sup>13</sup>. In developing countries, where the costs of medical therapy may be prohibitive, patients tend to undergo surgical treatment precociously, and the need for a secondary TURP in a long-term follow-up is emphasized<sup>2</sup>. This second procedure burdens the health system and increases patient morbidity.

The TURP syndrome is a potential complication of TURP in countries where bipolar saline TURP is not available. A probable explanation for this is that an experienced urologist operates quickly and perhaps more aggressively and radically. This might aggravate the risk of absorption of more irrigating fluid since the capsule is reached more quickly and may be perforated and also because the great veins are opened earlier in the operation. The inexperienced urologist is perhaps more careful, preferring to leave some tissue close to the capsule rather than risk a perforation and open veins, which reduces the risk of fluid absorption. Since we did not have the facilities available at our hospital to analyze the incidence of irrigating fluid absorption, we could not do it however it can be assumed that, this might have a significant influence. However other studies have also shown that the experience of the surgeon is not significantly predictive of irrigation fluid absorption<sup>4,5</sup>. The price for this conservative behaviour is a higher risk of redo TURP due to recurring adenomas, as we recorded above (14 in Group I and only 3 in Group II).

## Conclusion

In conclusion, the senior urologist was capable of resecting four times more tissue per time unit than the inexperienced surgeons. The surgeon's experience may be important for reducing the risk of secondary TURP due to recurring adenomas or adenomas that were incompletely resected. We suggest that this is the case because the senior urologist operates more quickly and is likely more radical in the resection thereby reducing the risk of secondary TURP.

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